



Winter Park Solar Rates Discussion

City of Winter Park
June 2018

Residential Rate Structures

Changing

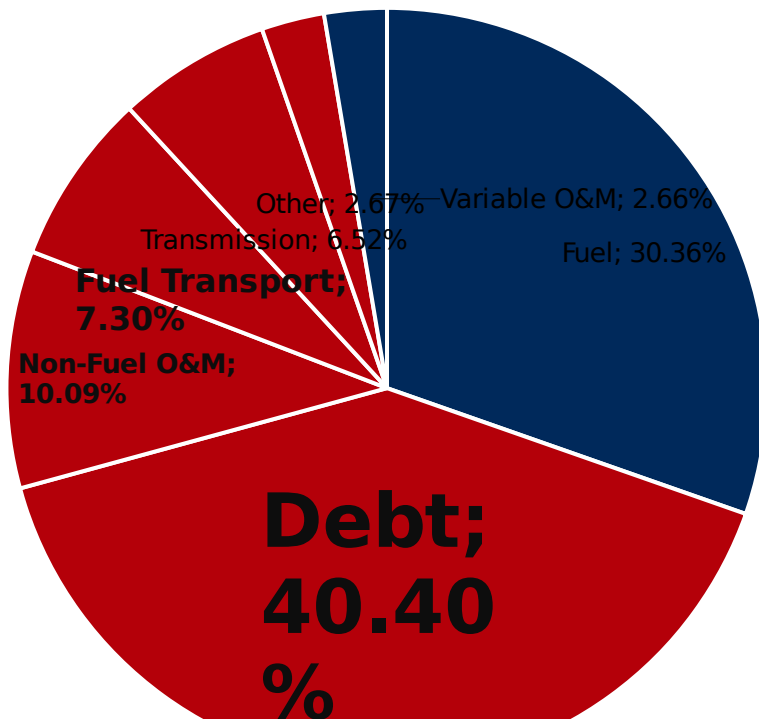
Rates should Better Align with Actual Costs

- Majority of costs to serve customers are fixed (generators, T&D lines, staff)
- Variable cost to serve a customer limited to cost of energy (2 to 3 cents per kWh)
- Traditional residential rates ignore cost to serve for social reasons and collect most \$ in a variable manner
 - Residential solar takes advantage of cost misalignment, harming the rest of the customers
- Significant nationwide actions focused on increasing fixed charges to improve alignment
 - Raising customer fixed charge appropriate to prevent consumers with ability to fund solar projects from being “subsidized” by lower income consumers
- Marketing utility-scale solar to customers a great way to offer “cost-effective” alternative

Majority of Power Delivery Costs Fixed

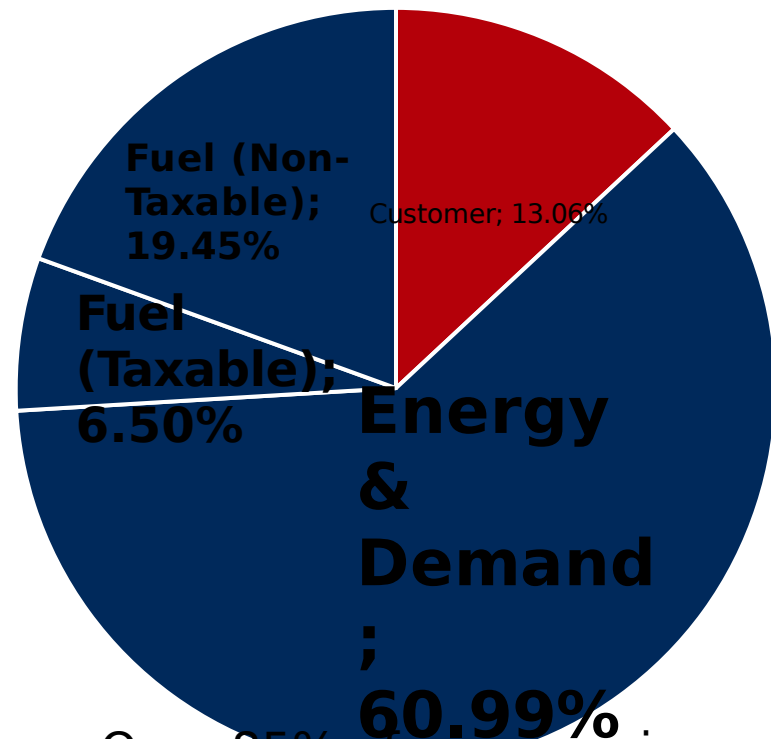
Traditional Cost of Service Not Aligned

Wholesale Power Cost



60% or more of costs are fixed and distribution is almost entirely fixed.

Residential Bill



Over 85% of recovery is variable.
 Winter Park Feb 2018 rates for 1,000 kWh (w/o taxes and fees)

Residential Solar Reduces Energy Cost

Other Aspects of Utility Costs

Unaffected

- Having customers install solar on their rooftops does not mean less:
 - Power plants*
 - People/staff
 - Transmission lines*
 - Distribution lines/substations/feeders*
- Value generally is found in energy + losses that would otherwise have to be served

Solar Lowers MWhs, Fixed Costs Remain

Solar Energy to Grid Doesn't Lower Fixed Costs

Winter Park Example - 50% of Residential Customers Get Rooftop Solar

Customer Class	Approx. Customers	Avg. kW-AC Installed	Total kW @50% Adoption	Annual Energy Lost (MWh)
Residential	12,000	4.0	24,000	52,560

- If 50% of Winter Park's customers adopted rooftop PV, city could lose as much as 52,000 MWh of energy per year
- Assuming a rough revenue base of \$100/MWh (10 cents/kWh), that would reduce revenue by ~\$5.3M a year, or ~\$400k a month
- Spreading that loss over the entire customer base would require a customer charge increase of around \$33 a month per customer (in addition to ~\$14 a month existing charge)

Customer Charge Increase

Appropriate

Gradual Increase Sends Right Market Message

- Increasing (gradually) the customer charge per month across the system is a way to send the appropriate price signal and better align costs with reality
- If solar net metering credit remains at full retail (implied rate per kWh), may consider adjusting to focus on energy charge to eliminate cost burden for non-solar customers
- Could group customer charge based on low (e.g. <800 kWh/mo.) versus higher consumption levels to limit impact on lower consumption (multi-unit apartment and lower income) customers

Other Utilities Heading Down Same Path

1/3 of Actions for Res Fixed Charge Increase

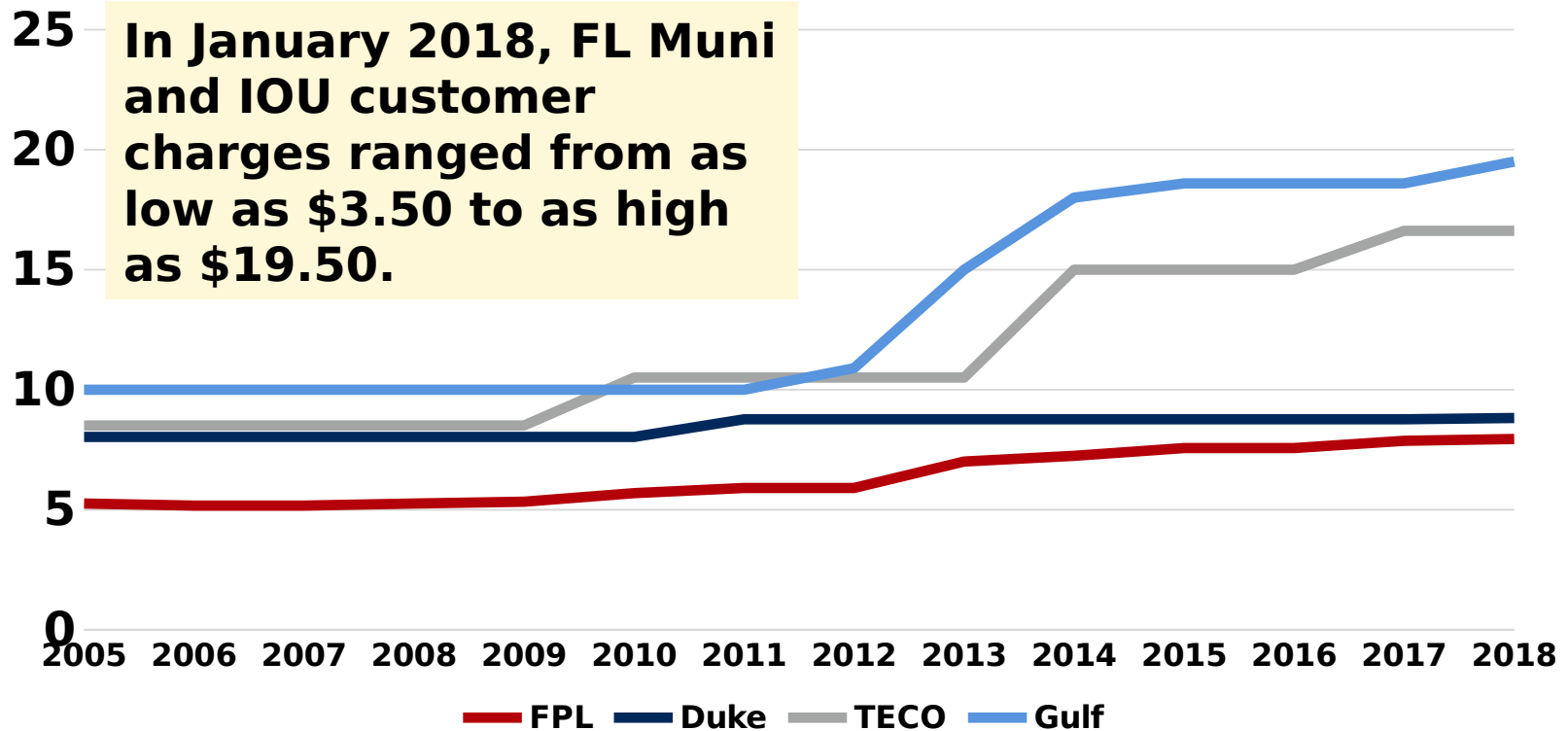
Policy	# of Actions	% by Type	# of States
Res Fixed \$ Increase	49	33%	26
Compensation Rules	39	26%	25 + DC
Valuation	21	14%	17 + DC
Community Solar	18	12%	15
Res Demand/PV Charge	10	7%	5 + DC
3 rd Party PV Ownership	8	5%	3 + DC
Utility-led rooftop PV	4	3%	4
Total	149	100%	40 + DC

Source: 50 States of Solar, Q1 2018, NC Clean Energy Technology Center

FL IOU Customer Charges Creeping Up

Forward Looking Municipals Increasing

Beginning of Year Residential Customer Charge (\$)



Munis Differ from IOUs on Ratemaking

Commission Decisions Lower

Proposed Hikes

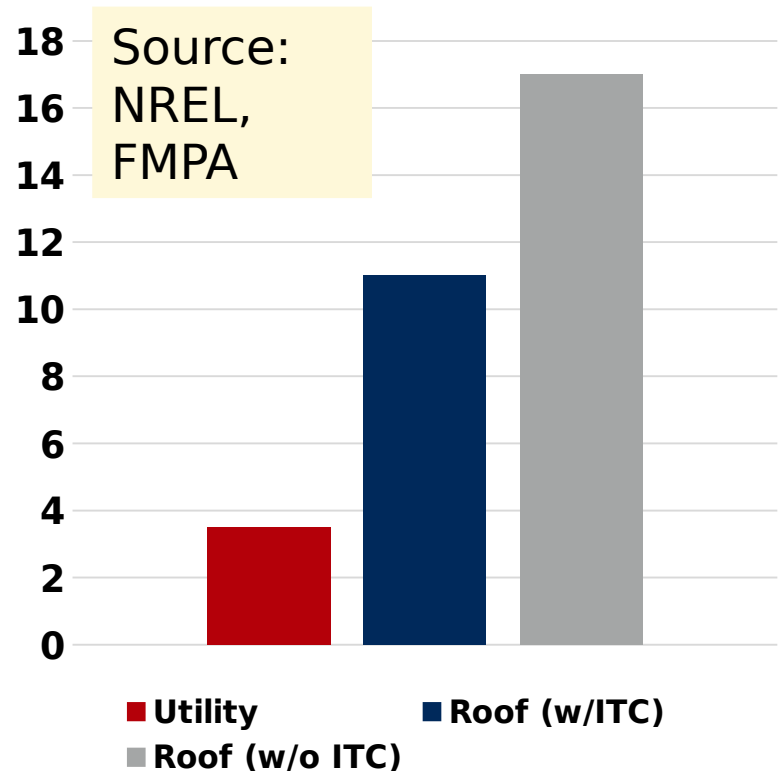
- 2017 – Gulf Power Proposed a \$48.06 customer charge, up from \$18.86, which was not approved
- 2016 – FPL proposed a \$10.00 customer charge, up from \$7.86, which was not approved
- Commissions approved some level of increase in 63% of cases in 2017
- FL municipals with highest customer charges outside of Winter Park include Key West, Gainesville, Leesburg, and Ft. Meade
- Average approved customer charge crept upward
- Benchmarking to neighbor's policies is a consideration when making gradual changes

Utility-Scale Solar: Lowest Cost Solution

Market Residential Solar Access for Much Lower Cost

- Marketing subscriptions (or slices) of utility-scale solar to interested customers is a great solution
- Customers only pay a small cost adder to their billed rate
- Ideal for multi-family, low income, and homes not suited for PV on the roof

Cents per kWh Cost for Solar



Solar Policy Communication

is Key *Strategic Messaging Overcomes Objections*

Stakeholder Opinion	Communication Strategy
The utility does not want full access to solar, as they are concerned about their own interests.	Winter Park already has low cost utility scale solar and is offering it up to customers as 100% option.
Higher fixed charges will punish customers who don't use as much energy in favor of larger users.	Create tiers of fixed charges based on usage levels to limit impact on lower income customers.
Rooftop solar does provide incremental energy and is on during the peak, so why can't you credit me for capacity (demand) benefit?	Solar is not under firm utility control and is highly intermittent. Not on during the winter peak, and we need most of our generation in both seasons. Solar does not diminish need for most generation*.
My rooftop system means you can save money on all of those poles and wires - I should actually see a lower customer charge.	Capital expenditures (poles and wires) are made in "chunks" of MW every 10 - 25 years. Solar in small increments defers no costs. Rooftop customers use distribution system all non-solar hours and to "back-feed", so they need and use poles and wires*.
You're not doing the valuation right, because* Anticipate and plan ahead for philosophical challenges to strategy.	Florida's generation fleet is already very low on emissions. We can lower emissions even further using economic,



Back-Up Slides

Vicious Cycle Exists for PV Incentives

MWWhs Down and Higher Costs for Non-PV

- Full retail credit (or close) over-incentives PV, leads to more uptake
- Fixed cost recovery goes up per remaining MWh, leads to increased rates for non-participants
- Hurdle gets lower (rates are higher), and more non-participants want/get solar
- Increases burden again for non-solar and so on – not sustainable in the long run

Rooftop PV Provides Certain

Value

Elements of Value Specific to Community

Value Element	Value Delivered
Avoided Energy + Losses	Fuel and other variable cost of unit that would otherwise have to run is avoided; avoided T&D losses for back-feed kWh
Avoided Capacity	Avoided capacity in the market if and only for the portion of PV available on-peak and only if PV amounts are large enough to avoid the next unit*
Avoided T&D Upgrades	Avoided dollars spent upgrading system to support higher load w/o PV, only if system upgrades can fully be avoided*